

LETTER

New-onset guttate psoriasis following coronavirus disease 2019 vaccination: About two cases

Dear Editor,

Several cutaneous complications have been reported with coronavirus disease 2019 (COVID-19) vaccines. Most of them are benign and consist mainly of delayed local reactions, urticaria, and

morbilliform eruptions.¹ Herein, we describe two cases of new-onset guttate psoriasis after the COVID-19 vaccine.

The first patient was a 59-year-old man, with no particular medical history, especially no personal or family history of psoriasis. He



FIGURE 1 (A) Drop-like erythematous scaly papules over the back after the first injection of PfizerBioNTech mRNA vaccine, (B) Auspitz sign, (C) Sharply demarcated, scaly papules over the trunk after the second dose of vaccine, (D) Slight clinical improvement of the lesions of the back after the treatment with topical steroid, (E, F) Extension of the lesions over the hands and knee after the third dose of vaccine

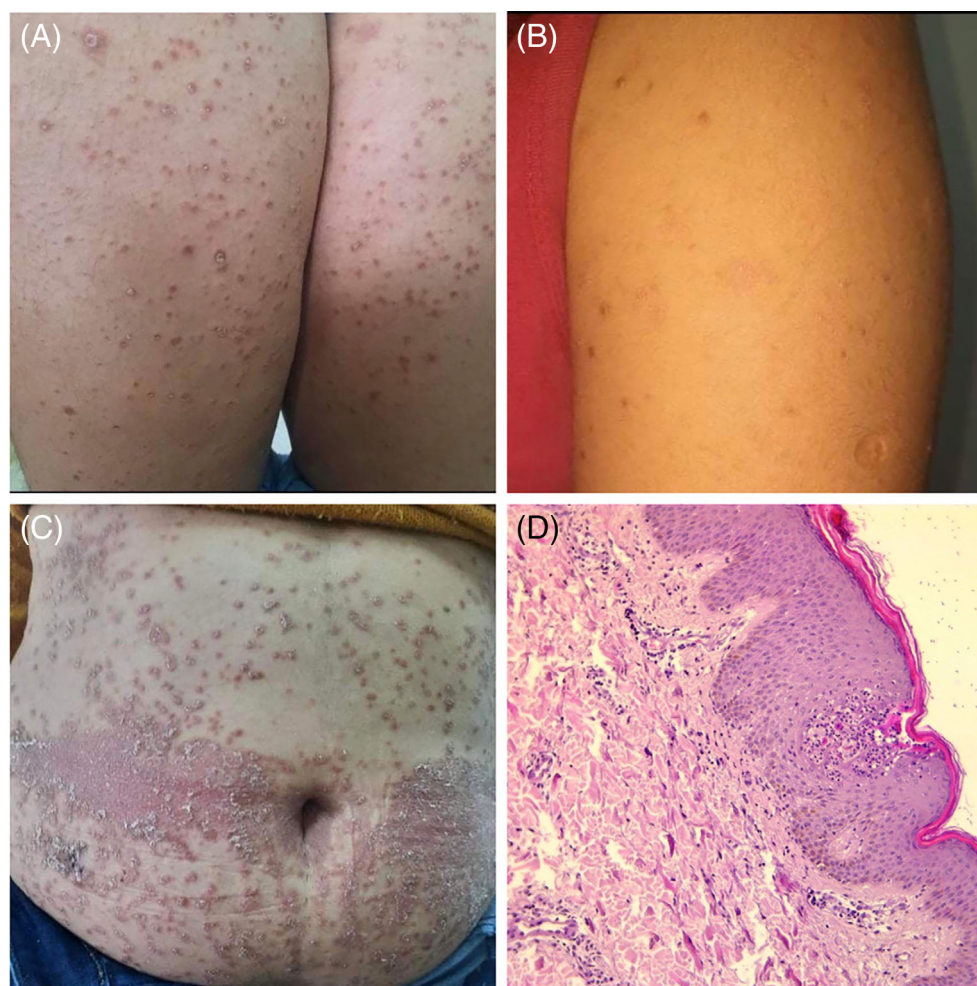


FIGURE 2 (A) Multiple scaly small papules of the thighs following Janssen vaccine, (B) Scaly papule appearing on the site of injection, (C) Numerous scaly papules and large plaque over the abdomen (Koebner phenomenon), (D) hyperkeratosis, parakeratosis of the epidermis with neutrophilic microabscesses and perivascular infiltration of inflammatory cells in the upper dermis. (HE $\times 100$)

presented with erythematous lesions that developed 2 weeks after receiving the first injection with Pfizer-BioNTech BNT16B2b2 mRNA Vaccine. Clinical examination revealed a few drop-like erythematous scaly papules ranging from 0.5 to 1 cm affecting the trunk, the face, and the back (Figure 1A). An Auspitz sign was observed when silvery scales were removed from a lesion on his back (Figure 1B). No mucosal lesions or ungual alterations were observed. He denied any recent medication or underlying infections. The diagnosis of guttate psoriasis was evoked and histological examination of skin biopsy confirmed the diagnosis. The patient was treated by high-level topical corticosteroid resulting in a slight improvement within 2 weeks of treatment. One month later, after 1 week of his second dose of the same vaccine, he presented with disseminated, sharply demarcated, scaly papules all over the body and scaling in his ear canal (Figure 1C). The patient was treated by topical clobetasol propionate ointment once daily resulting in clinical improvement (Figure 1D). The patient received his third dose with the same vaccine and we noted a clinical exacerbation few days later (Figure 1E,F) suggesting a potential relation between the psoriasis and Pfizer-BioNTech BNT16B2b2 mRNA Vaccine.

The second patient was a 23-year-old woman, with no particular medical history, especially no familial or personal history of psoriasis. She presented with diffuse erythema and numerous scaly small

papules following Janssen vaccine (Figure 2A). The first lesion appeared on the injection site (Figure 2B) 2 days after the vaccination, and subsequently extended to her arms, legs, and trunk (Figure 2C). The rest of physical examination did not show any abnormalities, especially we did not note any sign of systemic infection. In addition, the patient denied any recent medication. We performed a skin biopsy confirming the diagnosis of guttate psoriasis (Figure 2D). We started treatment with high-level topical steroid and the patient refused any additional dose vaccine.

We describe two rare cases of guttate psoriasis following COVID-19 vaccination. The causal relation was suggested based on the delay of the onset, the flare-up after the second dose and the third dose in the first patient and the absence of infection or new medication. Comparatively, our second patient is younger with a shorter delay between vaccine and clinical onset of psoriasis. Our second patient represents the first reported case of new-onset guttate psoriasis after Janssen vaccine. To the best of our knowledge, only a few cases of new-onset guttate psoriasis after a COVID-19 Pfizer vaccine have been recently reported in the literature.¹⁻⁴ The etiological relationship between psoriasis and COVID-19 vaccination is still uncertain. It is shown that Pfizer-BioNTech COVID-19 Vaccine which is an mRNA vaccine increases the levels of IL-15, IFN- γ , and CXCL10

after the 1st dose and of the TNF- α and IL-6 after the second vaccination.⁵ This may explain the onset of psoriasis which is a Th1-dominant disease in genetically predisposed individuals, where IFN- γ , TNF α and IL-6 promote epidermal proliferation and IL-15 triggers inflammatory cell recruitment, angiogenesis and production of IFN- γ , TNF α , and IL-17, which are all upregulated in psoriatic lesions.⁶ For our second patient, the first lesion developed on the injection site and was suspected as a Koebner phenomenon, but the lesions spread on to other sites of the body which could not be explained by only Koebnerization. Janssen vaccine, which is an adenoviral vector vaccine Ad26.COVS.2, may activate an immune response in a way similar to COVID-19 virus, via binding to Toll-like receptors and thus producing type 1 IFN and other pro-inflammatory cytokines.³ To susceptible patients, this process can manifest as guttate psoriasis-like lesions.

The very low incidence of this condition and the effectiveness of COVID-19 vaccines should not change the immunization practice. Nevertheless, it is important to acknowledge vaccination as a triggering factor of psoriasis new-onset.

AUTHOR CONTRIBUTIONS



Nourelimene Ouni, Mouna Korbi, Ferdaous Chahed, Najeh Ben Fadhel, Ahlem Bellalah, Hichem Belhadjali, Karim Aouam, and Jameleddine Zili were involved in data collection for manuscript preparation and review of literature.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in: Lehmann M, Schorno P, Hunger RE, Heidemeyer K, Feldmeyer L, Yawalkar N. New onset of mainly guttate psoriasis after COVID-19 vaccination: a case report. *J Eur Acad Dermatol Venereol*. 2021;35:e752–e755. <https://doi.org/10.1111/jdv.17561>

ETHICS STATEMENT

Written and informed consent from the patients for the use of image and publication of their case details was obtained

Nourelimene Ouni¹ 
Mouna Korbi¹ 
Ferdaous Chahed²

Najeh Ben Fadhel²

Ahlem Bellalah³

Hichem Belhadjali¹

Karim Aouam²

Jameleddine Zili¹

¹Dermatology Department, Fattouma Bourguiba Hospital, Dermo-Respiratory Research Laboratory UR14 SP 03, University of Medicine, Monastir, Tunisia

²Pharmacology department, Fattouma Bourguiba Hospital, University of Medicine, Monastir, Tunisia

³Anatomopathology department, Fattouma Bourguiba Hospital, University of Medicine, Monastir, Tunisia

Correspondence

Nourelimene Ouni, Fattouma Bourguiba Hospital, University of Medicine, Monastir, Tunisia.

Email: nourelimene286@gmail.com

ORCID

Nourelimene Ouni  <https://orcid.org/0000-0001-8052-8363>

Mouna Korbi  <https://orcid.org/0000-0002-9642-3344>

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